UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,178	01/25/2002	John Christian Hermansen	SVL920060501US3	8444

47069 7590 01/22/2008
KONRAD RAYNES & VICTOR, LLP
ATTN: IBM54
315 SOUTH BEVERLY DRIVE, SUITE 210
BEVERLY HILLS, CA 90212

EXAMINER	
HWANG, JOON H	

ART UNIT	PAPER NUMBER
2166	

MAIL DATE	DELIVERY MODE
01/22/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/055,178	HERMANSEN ET AL.	
	Examiner	Art Unit	
	Joon H. Hwang	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32-94* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-54,57,58 and 60-94* is/are rejected.

7)☒ Claim(s) *55,56 and 59* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The applicants amended claims 32 and 78 in the amendment filed on 10/29/07. The pending claims are 32-94.

Response to Amendment

2. The declaration under 37 CFR 1.132 filed on 10/29/07 is sufficient to overcome the rejection of claims 32-94 based upon Final Report (hereinafter FR) (Name Searching Research Project Phase 2, May 31, 1997, pages 1-67).

The declaration under 37 CFR 1.132 filed on 10/29/07 is insufficient to overcome the rejection of claims 32-54, 57-58, and 60-94 based upon Project Plan (hereinafter PP) (Name Searching Research Project Phase 2, 6/14/1996, pages 1-18) as set forth in the last Office action because: PP qualifies as prior art under 35 U.S.C. 102(b).

Response to Arguments

3. Applicant's arguments with respect to claims 32 and 78 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 32 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Project Plan (hereinafter PP) (Name Searching Research Project Phase 2,

6/14/1996, pages 1-18) in view of ANC-E (Software Design Description Automatic Name Classifier For CLASS-E (ANC-E), 3/19/1998, pages 1-60).

With respect to claim 32, PP teaches accessing a text input name entered as an input name by one or more of a user or a system (i.e., a query name, section 1 on pages 1-3). PP teaches determining multiple phonetic representations for a portion of the text input name, each of the multiple phonetic representations being for a different pronunciation of the text input name (i.e., multiple IPA representations for different pronunciations ([ʃei] and [ʃI]).of the query name (Shea), section 2.2 on page 3, section 2.2.1 on pages 3-5, and section 2.2.3.2.1 on pages 10-11). PP teaches comparing each of the multiple phonetic representations of the portion of the text input name to a phonetic representation of a portion of a text known name stored in a database (section 1 on pages 1-3 and section 2.3 on pages 11-13). PP teaches providing an indication of whether the text input name matches the text known name based on the comparing (section 1 on pages 1-3 and section 2.3 on pages 11-13). PP teaches classifying the text input name as belonging to a particular culture (section 2.2.1.1 on page 5). PP does not explicitly disclose classifying a text input name as belonging to a particular culture by: using a high frequency name data store of names that occur frequently in particular cultures, determining whether morphemes in a morpheme data store are present in the input name by searching for matching substrings of name segments in the input name, searching the input name for strings of letters that occur with statistical significance in particular cultures, and breaking the name into segments and using information in the segments to match at least one of a title, an affix, and a qualifier of

the text input name. However, ANC-E teaches classifying a text input name as belonging to a particular culture by (section 3.1.2.4.3 on page 14): using a high frequency name data store of names that occur frequently in particular cultures, wherein when there is a match with a name in the high frequency name data store of names, the particular culture associated with retrieved name and a confidence score associated with the retrieved name are recorded (section 3.1.4 on pages 17-18 and a figure on page 60), determining whether morphemes in a morpheme data store are present in the input name by searching for matching substrings of name segments in the input name, and wherein, for each morpheme found in the input name, the particular culture associated with the morpheme and a confidence level associated with the morpheme are recorded (section 3.1.6 on pages 19-20 and a figure on page 60), searching the input name for strings of letters that occur with statistical significance in particular cultures, wherein, for each n-gram present in an associated n-gram data store, when a match is found, the culture and score associated with that n-gram are recorded (section 3.1.7 on pages 20-21 and a figure on page 60), and breaking the name into segments and using information in the segments to match at least one of a title, an affix, and a qualifier of the text input name, wherein, for each segment present in the input name that matches a particle in a data store, the culture associated with that particle and a confidence score associated with that particle are recorded (section 3.1.5 on pages 18-19 and a figure on page 60) in order to provide a linguistically well-founded decision as to the cultural affinity of the input name (section 3.1.2.3.1 on page 13). Therefore, based on FR in view of ANC-E, it would have been obvious to one having ordinary skill

in the art at the time the invention was made to utilize the teaching of ANC-E to the system of FR in order to improve name searching algorithms thereby yielding better matching and retrieval performance.

The limitations of claim 78 are rejected in the analysis of claim 32 above, and the claim is rejected on that basis.

6. Claims 32-52, 58, 61-63, 66, 70, 76-89, and 93-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshika et al. ("Improved Retrieval Of Foreign Names From Large Database", 1988, IEEE, pages 480-487) in view of Project Plan (hereinafter PP) (Name Searching Research Project Phase 2, 6/14/1996, pages 1-18), and further in view of ANC-E (Software Design Description Automatic Name Classifier For CLASS-E (ANC-E), 3/19/1998, pages 1-60).

With respect to claim 32, Oshika teaches classifying a text input name as belonging to a particular culture (i.e., a statistical (language) classifier based on HMM regarding a morphological element or a string of letters that occur with statistical significance in particular cultures, section 3.0 on page 48, section 3.2 on page 483-484, and section 3.3 on pages 484-485). Oshika teaches accessing the text input name entered as an input name by one or more of a user or a system (section 1.0 on page 480 and section 2.0 on page 480-481). Oshika teaches determining multiple phonetic representations for a portion of the text input name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 5.0 on pages 485-486, and section 6.0 on page 486). Oshika teaches comparing each of the multiple phonetic

representations of the portion of the text input name to a phonetic representation of a portion of the text known name stored in a database (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 5.0 on pages 485-486, and section 6.0 on page 486). Oshika teaches providing an indication of whether the text input name matches the text known name based on the comparing (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 5.0 on pages 485-486, and section 6.0 on page 486). Oshika does not explicitly disclose each of the multiple phonetic representations being for a different pronunciation of the text input name. However, PP teaches determining multiple phonetic representations for a portion of the text input name, each of the multiple phonetic representations being for a different pronunciation of the text input name (i.e., multiple IPA representations for different pronunciations ([ʃei] and [ʃI]) of the query name (Shea), section 2.2 on page 3, section 2.2.1 on pages 3-5, and section 2.2.3.2.1 on pages 10-11) in order to improve the quality of automatic name searching (section 1.1 on page 1). Therefore, based on Oshika in view of PP, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of PP to the system of Oshika in order to improve the quality of automatic name searching. Oshika and PP do not explicitly disclose classifying a text input name as belonging to a particular culture by: using a high frequency name data store of names that occur frequently in particular cultures, determining whether morphemes in a morpheme data store are present in the input name by searching for matching substrings of name segments in the input name, searching the input name for strings of letters that occur with statistical significance in

particular cultures, and breaking the name into segments and using information in the segments to match at least one of a title, an affix, and a qualifier of the text input name. However, ANC-E teaches classifying a text input name as belonging to a particular culture by (section 3.1.2.4.3 on page 14): using a high frequency name data store of names that occur frequently in particular cultures, wherein when there is a match with a name in the high frequency name data store of names, the particular culture associated with retrieved name and a confidence score associated with the retrieved name are recorded (section 3.1.4 on pages 17-18 and a figure on page 60), determining whether morphemes in a morpheme data store are present in the input name by searching for matching substrings of name segments in the input name, and wherein, for each morpheme found in the input name, the particular culture associated with the morpheme and a confidence level associated with the morpheme are recorded (section 3.1.6 on pages 19-20 and a figure on page 60), searching the input name for strings of letters that occur with statistical significance in particular cultures, wherein, for each n-gram present in an associated n-gram data store, when a match is found, the culture and score associated with that n-gram are recorded (section 3.1.7 on pages 20-21 and a figure on page 60), and breaking the name into segments and using information in the segments to match at least one of a title, an affix, and a qualifier of the text input name, wherein, for each segment present in the input name that matches a particle in a data store, the culture associated with that particle and a confidence score associated with that particle are recorded (section 3.1.5 on pages 18-19 and a figure on page 60) in order to provide a linguistically well-founded decision as to the cultural affinity of the

input name (section 3.1.2.3.1 on page 13). Therefore, based on Oshika in view of FR, and further in view of ANC-E, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of ANC-E to the system of Oshika in order to improve name searching algorithms thereby yielding better matching and retrieval performance.

With respect to claim 33, Oshika teaches selecting a rule based on the classifying of the text input name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486). Oshika teaches applying the rule in determining the multiple phonetic representations for the portion of the text input name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claim 34, Oshika teaches selecting a multiple rules based on the classifying of the text input name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486). Oshika teaches applying the multiple rules in determining the multiple phonetic representations for the portion of the text input name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claim 35, PP further teaches determining articulatory similarity between at least one of the multiple phonetic representations of the portion of the text input name and the phonetic representation of the portion of the text known name (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section

2.3.2 on page 12, and section 2.3.3 on pages 12-13). PP also teaches providing an indication of articulatory similarity between the text input name and the text known name, the indication of articulatory similarity being based on the determining of articulatory similarity (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claim 35 are rejected in the analysis of claim 32 above, and the claim is rejected on that basis.

With respect to claim 36, PP further teaches identifying an articulatory variation between one or more of the multiple phonetic representations of the portion of the text input name and the phonetic representation of the portion of the text known name, and classifying the articulatory variation as likely or unlikely, and wherein determining articulatory similarity comprises attributing less significance to the articulatory variation, so as to indicate greater articulatory similarity, if the articulatory variation is likely than if the articulatory variation is unlikely (section 1.1 on page 1, section 1.2 on pages 1-3, sections 2.2.2 on pages 8-9, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claim 36 are rejected in the analysis of claim 35 above, and the claim is rejected on that basis.

With respect to claim 37, PP further teaches determining articulatory similarity based on a culture-specific rule (section 1.1 on page 1 and section 1.2 on pages 1-3). Therefore, the limitations of claim 37 are rejected in the analysis of claim 35 above, and the claim is rejected on that basis.

With respect to claim 38, PP further teaches determining, for the at least one of the multiple phonetic representations of the portion of the text input name, how many phonetic features are in common between corresponding portions of the at least one phonetic representation of the portion of the text input name and the phonetic representation of the portion of the text known name and providing an indication that is based on the determining of how many phonetic features are in common (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claim 38 are rejected in the analysis of claim 35 above, and the claim is rejected on that basis.

With respect to claim 39, PP further teaches an International Phonetic Alphabet (IPA) representation of the text input name and an IPA representation of the portion of the text known name (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). PP teaches determining how many phonetic features are in common between corresponding symbols from the IPA representation of the portion of the text input name and the IPA representation of the portion of the text known name (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claim 39 are rejected in the analysis of claim 38 above, and the claim is rejected on that basis.

With respect to claim 40, PP further teaches determining how many phonetic features are in common between corresponding symbols from the IPA representation of the portion of the text input name and the IPA representation of the portion of the text

known name is based on a culture-specific rule (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claim 40 are rejected in the analysis of claim 39 above, and the claim is rejected on that basis.

With respect to claim 41, PP further teaches determining multiple representation that are each based on an IPA (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claim 41 are rejected in the analysis of claim 32 above, and the claim is rejected on that basis.

With respect to claim 42, Oshika teaches comparing each of the multiple phonetic representations of the portion of the text input name to a second phonetic representation of the portion of the text known name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claim 43, Oshika teaches accessing a character representation of the text input name (section 1.0 on page 480, section 2.0 on page 480-481, and section 3.0 on page 481),

With respect to claim 44, PP further teaches using a rule relating character representations to sounds (i.e., rules based on phonological (articulatory) principles, section 2.2 on page 3). Therefore, the limitations of claim 44 are rejected in the analysis of claims 32 and 43 above, and the claim is rejected on that basis.

With respect to claim 45, Oshika teaches the character representation of the text input name reflects a spelling from a specific culture and determining multiple phonetic representations comprises using a rule for determining phonetic representations, the rule being based on the specific culture (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claim 46, Oshika teaches the character representation of the text input name reflects a spelling from a specific culture, the text input name belongs to another culture that is different from the specific culture, and determining multiple phonetic representations comprises using a rule for determining phonetic representations, the rule being based on the specific culture (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claim 47, Oshika teaches the character representation of the text input name reflects a spelling from a specific culture, the text input name belongs to another culture that is different from the specific culture, and determining multiple phonetic representations comprises using a rule for determining phonetic representations, the rule being based on the other culture (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claim 48, Oshika teaches the character representation of the text input name reflects a spelling from a specific culture, the text input name belongs to the

specific culture, and determining multiple phonetic representations comprises using a rule for determining phonetic representations, the rule being based on the specific culture (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claims 49-50, PP further teaches providing an indication that the text input name exactly or not exactly matches the text known name (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claims 49-50 are rejected in the analysis of claim 32 above, and these claims are rejected on that basis.

With respect to claim 51, Oshika teaches comparing, for at least one of the multiple phonetic representations of the portion of the text input name, corresponding parts of the at least one phonetic representation of the portion of the text input name and the phonetic representation of the portion of the text known name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

With respect to claim 52, Oshika teaches parts that correspond at a syntactic level (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, and section 4.0 on page 485).

With respect to claim 58, PP further teaches parts that correspond at a phonologic level (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the

limitations of claims 58 are rejected in the analysis of claims 32 and 51 above, and the claim is rejected on that basis.

With respect to claim 61, PP further teaches providing a rank-ordered list of names, with rank-order indicating a likelihood of matching the text input name (section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claims 61 are rejected in the analysis of claim 32 above, and the claim is rejected on that basis.

With respect to claim 62, PP further teaches ranking names on the rank-ordered list based on a degree of articulatory similarity between names on the rank-ordered list and the text input name (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claims 62 are rejected in the analysis of claim 61 above, and the claim is rejected on that basis.

With respect to claim 63, PP further teaches the rank-ordered list of names includes the text known name (section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claims 63 are rejected in the analysis of claim 61 above, and the claim is rejected on that basis.

With respect to claim 66, PP further teaches comparing, for at least one of the multiple phonetic representations of the portion of the text input name, an initial sound of the at least one of the multiple phonetic representations of the portion of the text input name and an initial sound of the phonetic representation of the portion of the text known name, and basing rank-order of the text known name on the comparing of initial sounds

(section 1.1 on page 1, section 1.2 on pages 1-3, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claims 66 are rejected in the analysis of claim 63 above, and the claim is rejected on that basis.

With respect to claim 70, PP further teaches comparing, for at least one of the multiple phonetic representations of the portion of the text input name, orthographic similarity between the at least one of the multiple phonetic representations of the portion of the text input name and the phonetic representation of the portion of the text known name, and basing rank-order of the text known name on the comparing of orthographic similarity (section 1.1 on page 1, section 1.2 on pages 1-3, section 2.2 on page 3, and section 2.2.1 on pages 3-5, section 2.3 on pages 11-12, section 2.3.2 on page 12, and section 2.3.3 on pages 12-13). Therefore, the limitations of claims 70 are rejected in the analysis of claim 63 above, and the claim is rejected on that basis.

With respect to claims 76-77, Oshika teaches accessing a portion of a complete name or the entire text input name (section 1.0 on page 480, section 2.0 on page 480-481, section 3.0 on page 481, section 4.0 on page 485, and section 6.0 on page 486).

The limitations of claims 78-88 are rejected in the analysis of claims 32-42 above, and these claims are rejected on that basis.

The limitations of claim 89 are rejected in the analysis of claim 51 above, and the claim is rejected on that basis.

The limitations of claims 93-94 are rejected in the analysis of claims 61-62 above, and these claims are rejected on that basis.

7. Claims 53-54, 57, 60, 64-65, 67-69, 71-75, and 90-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshika et al. ("Improved Retrieval Of Foreign Names From Large Database", 1988, IEEE, pages 480-487) in view of Project Plan (hereinafter PP) (Name Searching Research Project Phase 2, 6/14/1996, pages 1-18) and ANC-E (Software Design Description Automatic Name Classifier For CLASS-E (ANC-E), 3/19/1998, pages 1-60), and further in view of Hermansen ("Automatic Name Searching in Large Data Bases of International Names," 1985).

With respect to claims 53-54, Oshika, PP, and ANC-E do not explicitly disclose parts that correspond at a syllabic level. However, Hermansen teaches parts that correspond at a syllabic level including a first part that relates to a left-most syllable of the portion of the input name and a second part that relates to a left-most syllable of the portion of the known name (chapter 4 on pages 68-83 and chapter 6 on pages 111-137) for an effective name searching. Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Hermansen to the system of Oshika for syllabic level of parts in order to search and match names effectively.

With respect to claim 57, Oshika, PP, and ANC-E do not explicitly disclose parts that correspond at a morphologic level. However, Hermansen teaches parts that correspond at a morphologic level (chapter 2 on pages 14-41, chapter 4 on pages 68-83, and chapter 6 on pages 111-137) for an effective name searching. Therefore, based on

Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Hermansen to the system of Oshika for a morphologic and a phonologic level of parts in order to search and match names effectively.

With respect to claim 60, Oshika, PP, and ANC-E do not explicitly disclose comparing sonority level. However, Hermansen teaches generating name variants based on phonetic, phonetic equivalence or phonic coding, which try to combine similar sounding consonant teaching sonority (section 2.5 on page 23-24, section 2.5.2 on pages 28-30, and chapter 4 on pages 68-83). Hermansen also teaches providing an indication of similarity between the input name and the known name, wherein the input name is the variant based on the phonetic representation (section 2.1 on pages 15-16, section 3.2 on page 46-50, section 3.3 on pages 52-55, and section 3.4 on pages 55-59). Thus, these teach a sonority level comparing. Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Hermansen to the system of Oshika for a sonority level comparing in order to search and measure a likelihood of a name matching effectively.

With respect to claim 64, Oshika, PP, and ANC-E do not explicitly disclose comparing sonority level. However, Hermansen teaches generating name variants based on phonetic, phonetic equivalence or phonic coding, which try to combine similar sounding consonant teaching sonority (section 2.5 on page 23-24, section 2.5.2 on pages 28-30, and chapter 4 on pages 68-83). Hermansen also teaches providing an

indication of similarity between the input name and the known name, wherein the input name is the variant based on the phonetic representation (section 2.1 on pages 15-16, section 3.2 on page 46-50, section 3.3 on pages 52-55, and section 3.4 on pages 55-59). Thus, these teach a sonority level comparing. Hermansen teaches providing a rank-ordered list of names, with rank-order indicating a likelihood of matching the input name (chapter 2 on pages 14-41). Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Hermansen to the system of Oshika for a sonority level comparing in order to search and measure a likelihood of a name matching effectively.

With respect to claim 65, Oshika, PP, and ANC-E do not explicitly disclose a morphological element. However, Hermansen teaches determining whether the known name includes a morphological element and providing a rank-ordered list of names, with rank-order indicating a likelihood of matching the input name (chapter 2 on pages 14-41, chapter 4 on pages 68-83, chapter 5 on pages 84-110, and chapter 6 on pages 111-137). Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Hermansen to the system of Oshika for a morphological comparing in order to search and measure a likelihood of a name matching effectively.

With respect to claims 67-68, Oshika, PP, and ANC-E do not explicitly disclose comparing syllabic structure. However, Hermansen teaches comparing, for at least one

of the multiple phonetic representations of the portion of the input name, syllabic structure of the at least one of the multiple phonetic representations of the portion of the input name and the phonetic representation of the portion of the known name and providing a rank-ordered list of names including the known name, with rank-order indicating a likelihood of matching the input name (chapter 2 on pages 14-41, chapter 4 on pages 68-83, chapter 5 on pages 84-110, and chapter 6 on pages 111-137). Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Hermansen to the system of Oshika for comparing syllabic structure in order to search and measure a likelihood of a name matching effectively.

With respect to claim 69, Oshika, PP, and ANC-E do not explicitly disclose comparing location of stress. However, Hermansen teaches comparing, for at least one of the multiple phonetic representations of the portion of the input name, location of stress in the at least one of the multiple phonetic representations of the portion of the input name and the phonetic representation of the portion of the known name and providing a rank-ordered list of names including the known name, with rank-order indicating a likelihood of matching the input name (chapter 2 on pages 14-41, chapter 4 on pages 68-83, chapter 5 on pages 84-110, and chapter 6 on pages 111-137). Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Hermansen to the system of

Oshika for a location of stress in order to search and measure a likelihood of a name matching effectively.

With respect to claim 71, Oshika, PP, and ANC-E do not explicitly disclose comparing includes discounting. However, Hermansen teaches comparing each of the multiple phonetic representations of the portion of the input name to the phonetic representation of the portion of the known name comprises discounting, for at least one of the multiple phonetic representations of the portion of the input name, an occurrence of a likely articulatory variation between the at least one of the multiple phonetic representation of the portion of the input name and the phonetic representation of the portion of the known name (chapter 3 on pages 42-67, chapter 4 on pages 68-83, and chapter 6 on pages 111-137). Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Hermansen to the system of Oshika for comparing includes discounting in order to search and measure a likelihood of a name matching effectively.

With respect to claims 72-75, Oshika, PP, and ANC-E do not explicitly disclose a particle in the input name. However, Hermansen teaches identifying a particle in the input name and attributing less significance to the particle, than to another part of the input name, in providing the indication of whether the input name matches the known name, wherein the particle comprises an affix. Hermansen also teaches deciding not to determine and compare a phonetic representation of the particle attributed less significance for faster search processing (chapter 3 on pages 42-67, chapter 4 on pages

68-83, chapter 5 on pages 84-110, and chapter 6 on pages 111-137). Therefore, based on Oshika in view of PP and ANC-E, and further in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Hermansen to the system of Oshika for a particle in the input name in order to search and match names effectively.

The limitations of claims 90-91 are rejected in the analysis of claims 53-54 above, and these claims are rejected on that basis.

The limitations of claim 92 are rejected in the analysis of claim 60 above, and the claim is rejected on that basis.

Allowable Subject Matter

8. Claims 55-56 and 59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joon H. Hwang whose telephone number is 571-272-4036. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joon Hwang
Patent Examiner
Technology Center 2100

1/17/08